

CHAPTER 4

TRANSPORTATION

BACKGROUND

Adequate transportation facilities and service are important in the overall quality of life in Loudoun County. The various transportation facilities and services are closely tied with and mutually dependent upon planned land uses in the Toll Road planning area. The existing road network is inadequate to accommodate increased traffic and will need significant upgrading. Transit service (pedestrian travelways, park and ride lots, bus service, rail) is also limited and will require development in stages.

The Dulles Greenway is the major element for improving the transportation network. It will serve automobile traffic and accommodate mass transit through a continuous limited access expressway from Leesburg to Washington, DC. The Dulles Greenway will improve access to the Toll Road planning area and aid in the economic development of Loudoun County and the region by joining with Route 7 and Route 50 as a major east-west facility and will help relieve congestion on Routes 7, 28, and 50. An extensive feeder and parallel road network is planned to serve the Dulles Greenway and provide access for adjacent property owners.

A variety of transit opportunities, such as carpools, vanpools, park and ride lots, bus service, and, eventually, rail, are anticipated in the planning area. Recent rezonings have proffered rideshare facilities and programs, including land and funding for park and ride lots and employer ridesharing services. Commuter buses will access the Dulles Greenway from feeder roads and connect with other regional transit facilities. The Dulles Greenway will accommodate feeder service for commuter buses and carpools from park and ride lots located on collector roads. As long term development occurs in the form of nodes, transit service and rail may be developed to connect with the planned rail system in the existing Dulles Toll Road Corridor.

The County recognizes the important relationship between land use and transportation. A concentrated, compact development pattern of high intensity land uses is best served by bus and rail transit. The automobile better serves land uses which are dispersed, such as lower density residential and large scale retail uses. Most of the existing and zoned development in the planning area is suburban, characterized by scattered land uses dependent on automobiles.

One of the key land use strategies for the planning area is a nodal development pattern at certain locations between interchanges along the Dulles Greenway. Nodes will be served by mass transit and will accommodate a transit stop at the center of the node. Nodes will be designed to easily accommodate pedestrian movement. For nodes to function efficiently, they must be served by a pedestrian network that provides access to the various land uses in the core. Automobile-oriented uses are to be located on the periphery of nodes. The location of nodes between interchanges with transit stops will minimize conflicts with

through traffic on the Dulles Greenway and should minimize dependence on the car by reducing trip length and providing alternative transportation modes.

POLICIES

1. The County will pursue available Federal and State funding and negotiate transit-related proffers during the land development process to provide for various mass transit facilities and programs. These facilities and programs may include bus transportation between transit centers, bicycle/pedestrian trails, bus shelters, park and ride lots, and the initiation of TDM programs, such as ridesharing, carpool or vanpool matching, and reduced rate or free transit passes.
2. In order to encourage the use of transit, the County will consider reducing the minimum required parking spaces for development in nodal areas. The reductions should be based on levels of automobile occupancy or transit ridership anticipated by transit contributions and services provided by the developer.
3. The County will encourage employers to establish programs to reduce single occupant vehicle use, including flexible work hours, use of carpools, van pools and bicycles, preferential parking near entrances and free parking for ridesharing vehicles and reduced rate transit pass programs.
4. The County should allow additional density to landowners who provide for transit related services and facilities over and above needed road improvements.
5. The County will encourage shared parking in mixed use developments.
6. The Zoning Ordinance should be modified to allow for a reduction in the number of required parking spaces when transit services are provided.
7. The County requires the construction of transit facilities to support transit services and improve transit connections for transit users. Transit facilities include bus shelters, bike racks, transit stations, park and ride lots, and signage. Transit facilities are designated on the Transit Facilities Map on page XX.

RAIL

The Dulles Greenway offers a special transit opportunity that will greatly influence development in the Toll Road planning area and distinguish this area from other developing areas in the County. At present, the Dulles Greenway is the only road in the County that is planned to accommodate rail service. The Toll Road Investors Partnership II has set aside sufficient land in the median of the Dulles Greenway to accommodate two rail tracks. Actual development of a rail system will require resolution of a number of issues, including determining exactly where rail stations can be accommodated, identifying funding sources, and timing development to support rail service. For these reasons, the County's policies relating to rail transit are designed to provide maximum flexibility in the design of a rail system that will support the County's vision for the Toll Road planning area.

The land use and development strategy for the Toll Road planning area is designed to take full advantage of this future transit opportunity by supporting compact, high density nodal development around rail stations. The plan allows for rail stations to locate either within the median of the Dulles Greenway or adjacent to the Dulles Greenway in areas possible for nodal development. In these cases, rail will veer from the median of the Dulles Greenway to accommodate a rail station as the focal point for a high density nodal community. Rail service will be supported and augmented by an integrated system of related transportation opportunities such as feeder bus service, park and ride lots located within a 1/4 mile of the station, and a network of roads designed to carry commuters to and from less densely developed portions of the planning area.

Successful implementation of rail service in the Toll Road planning area will require coordination among private landowners, the Toll Road Investors Partnership II, the County, and a variety of state and federal agencies. Funding for rail service will most likely come from a combination of sources including local, State or Federal revenues as well as development proffers or private investors. Since both the funding and timing of rail service in the planning area are uncertain, the County seeks to ensure that the highest density development is phased to coincide with firm commitments to plan, design, fund and construct a rail system.

The County supports a potential regional transit center that includes a regional park and ride lot, planned to be served by bus and, potentially by rail. A site at the north of the Dulles Greenway/Route 606 interchange on Airport property has been endorsed by the County as a likely location for a regional transit facility. The State will include the site in the Dulles Corridor Rail Study to determine its feasibility as a transit center. The County encourages that additional rail stations be located in nodes. Station locations will be determined as nodes are proposed for development.

POLICIES

1. The County will encourage the development of rail in the median of the Dulles Greenway. The rail may veer from the Greenway right-of-way to serve nodal areas adjacent to the Dulles Greenway.
2. The County will encourage the redevelopment of surface parking lots to more intensive uses in the vicinity of transit stops.
3. Transit stops should be designed to provide year-round pedestrian shelters, convenient automobile passenger drop-off areas, and secure bicycle storage areas.
4. Transit stops should be designed to provide safe and convenient bicycle parking.

BUS

At the present time, bus service is limited in the Toll Road planning area. It will be important to coordinate future bus routes with regional services to the east. Although no specific future bus routes are planned, it is anticipated that the Dulles Greenway will be heavily utilized by commuter bus service with stops at adjacent park and ride facilities and

high density areas. Local bus service is also anticipated to tie together major employment and retail centers and residential communities in the County. Potential funding sources include Federal, State and local sources, ISTEA funds, and development proffers.

Bus service will provide an important transportation link in nodal areas. A bus stop at the center of the node will provide regional links to and from the Dulles Greenway prior to rail service. Regional bus service will be supported by local bus service, pedestrian access and park and ride facilities located at the edge of the nodes. The location of bus stations and surrounding land uses are important considerations in the design of efficient bus service. For frequent and efficient bus service, at least 15 dwelling units per acre located within a quarter mile of the transit stop ensures enough riders. Speed and convenience are key ingredients for local and regional bus service to the transit stop and the Dulles Greenway.

POLICIES

1. The County will facilitate the efficient movement of transit vehicles in nodal areas by establishing a priority transit corridor.
2. Developers of Urban Neighborhoods in designated Business Communities not located in nodes or at interchanges, will provide transit facilities, such as bus service, stops, and parking, and a link to nodal transit services.
3. Regional and Community Commercial Retail centers and High Density Residential areas should provide facilities to accommodate local transit service.
4. Future local bus routes will be coordinated with regional transit services established in the east.
5. The Dulles Greenway should be heavily utilized for commuter bus service. Bus stops will be established at park and ride facilities and in high density residential areas.
6. When local bus service is available, it will link major employment and retail centers with residential communities.

PARK AND RIDE LOTS

The Toll Road planning area is served by a Countywide Rideshare program which encourages and facilitates the formation of carpools, vanpools, and park and ride lots. There are currently no constructed park and ride facilities in the planning area. A combination of land, partial funding, and commitments to construct park and ride lots have been proffered in recent rezonings east of Goose Creek. In addition, a regional facility, the Western Regional Park and Ride lot has been endorsed by the County at the Dulles Greenway/Route 606 interchange. A description of the various park and ride lot proffer commitments is shown in Appendix C.

Park and ride facilities have been funded through a variety of sources, including Federal, State, local gas taxes, and private developers. The County has stated that it wishes to maintain a strong commitment to park and ride development and has allocated gas tax funds

for park and ride development which could be used for lots adjacent to the Dulles Greenway.

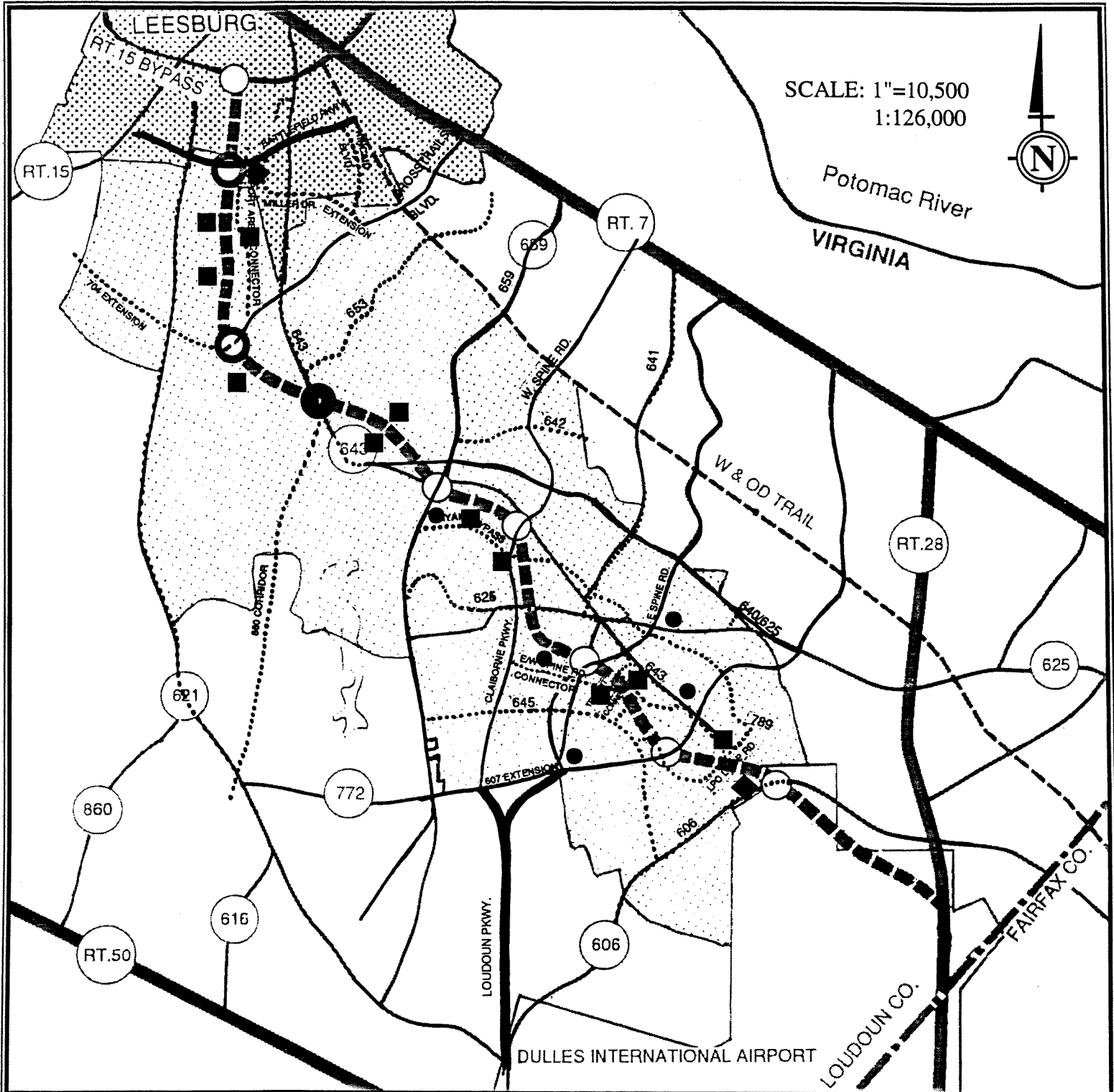
Park and ride lots will be located at visible and convenient places in the vicinity of, but not immediately adjacent to, intersections or interchanges. Adequate space for parking is important, especially for facilities serving the region. Regional park and ride lots are usually located at the end point on an express bus or rail line. Regional lots serve as collection centers for a large area, serving commuters who travel long distances to use transit. The plan promotes three regional park and ride lots, to be located in the western, central and eastern portions of the planning area. In residential areas, park and ride lots are located near the trip origination point. Park and ride lots serving nodes, will be located at least a quarter mile from the transit stop, in the secondary area surrounding the nodes to avoid traffic conflicts.

The County has endorsed the designation of two sites for the location of a major, regional park and ride lot, both on Airport property. One site, north of the Route 606 interchange in the Toll Road planning area, appears likely to provide the initial parking capacity needed for a regional park and ride facility. The County is considering endorsing the site to be included in the State's Western Regional Park and Ride Study for the development of an implementation program for the facility. The site may be suitable for the western origination point of a multi-modal (park and ride lot, bus, rail) transportation system being developed to serve the existing Dulles Toll Road corridor. Regardless of location, the County supports the development of a regional park and ride lot in conjunction with the development of the County's first rail station.

POLICIES

1. Park and ride lots will be located at convenient places along the Toll Road, in close proximity to interchanges and road intersections.
2. Regional lots that are planned to serve rail ridership should be sized to accommodate planned rail ridership.
3. Park and ride lots supporting transit centers in nodes will be located at least 1/4 of a mile from the transit stop or in the secondary area.
4. An eastern regional park and ride lot should be developed in conjunction with the first rail station in the corridor.
5. A centrally located regional park and ride lot should be located within the planning area.
6. A western park-and ride lot should be located within the Leesburg Urban Growth Area in close proximity to an interchange of the Toll Road.

Toll Road Plan



Transit Facilities Map

- ◆ Regional Park and Ride Lots
- Potential Transit Centers
- Proffered Park and Ride Lots

ROADS

The existing feeder and parallel road network serving the Dulles Greenway cannot support commercial development and can accommodate little additional residential development. The existing road network was developed to serve an agricultural community. The roads are generally narrow, include unpaved substandard segments, and need to be upgraded significantly to meet anticipated traffic demands. Existing road segments, such as Routes 643, 659, and 772, will be overburdened and may require public funding to accommodate traffic demand.

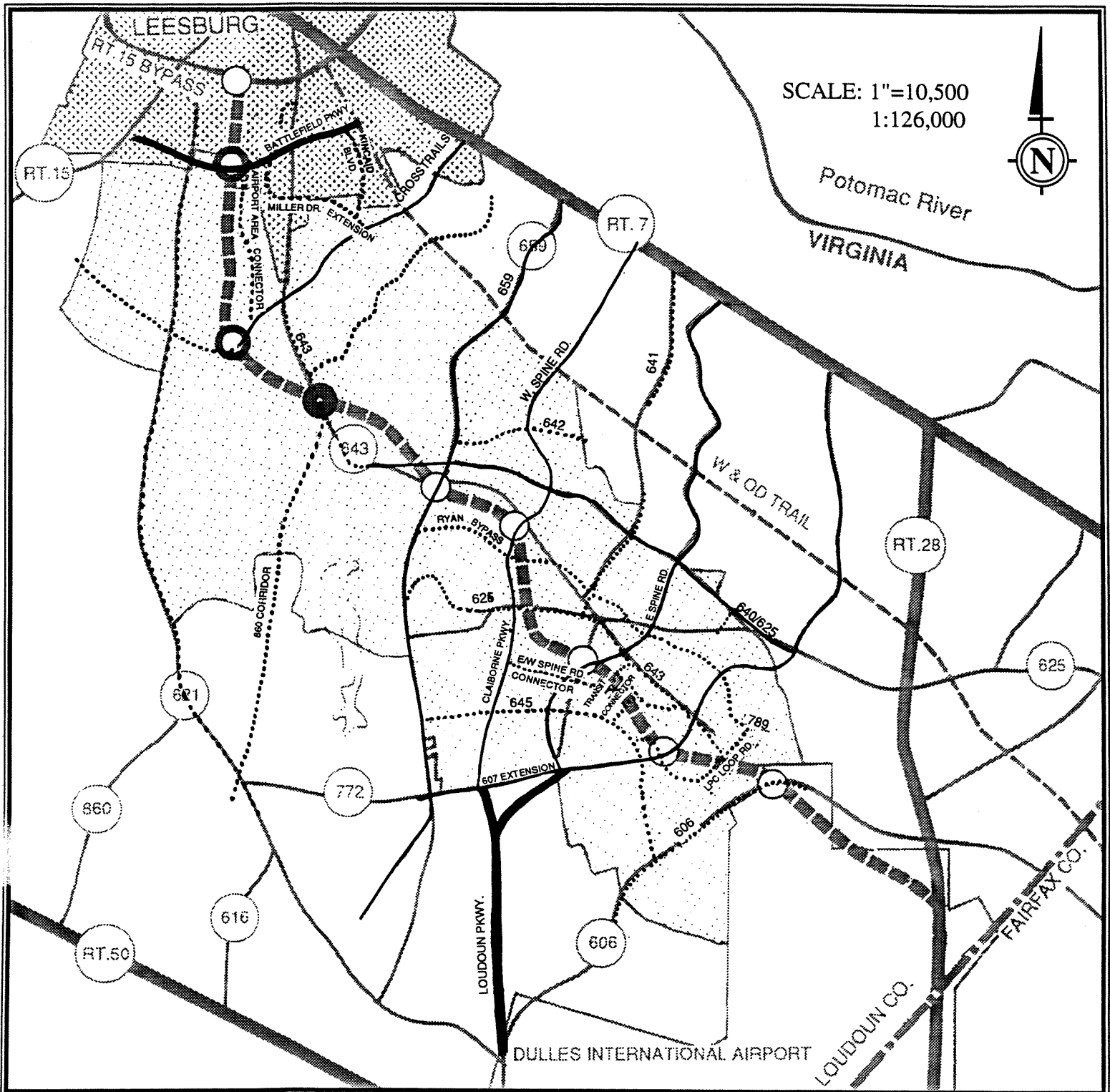
Road network improvements are needed for compatible local access adjacent to the Dulles Greenway and to ensure that feeder roads to the Toll Road accommodate increased traffic for planned land uses. In most instances, the County supports the construction of four lane divided facilities with expansion of the major collector roads to six lanes. Facilities serving local traffic may include undivided sections and reduced design speeds, where constraints warrant.

The County considers alignment flexibility as important to easily accommodate future land uses and potential changes in the Dulles Greenway. The County has identified the need for more diverse funding sources to maintain or increase current road funding levels, because of the lag time between Dulles Greenway construction and completion and the improvement of feeder roads.

The Dulles Greenway will extend approximately 14.5 miles from the existing Dulles Toll Road interchange at Route 28, to the Route 7/15 Bypass in Leesburg. The mainline of the Dulles Greenway and its interchanges are proposed for phased construction. Initially, the mainline will be four lanes. Two additional lanes can be constructed to the inside of the divided highway when justified by traffic demand. The Dulles Greenway will access the secondary feeder roads with interchanges at Routes 606, 607, 772, (East Spine Road), Claiborne Parkway (West Spine Road), 659, 653, 654, and the Route 7/15 Bypass. Two of the interchanges, Routes 654, and 653, are not anticipated as part of initial construction. Routes 654 and 653 are conditioned by the economic feasibility of making the improvement when unacceptable levels-of-service develop. The County supports the construction of a future interchange at the intersection of Route 643 with the Toll Road as well. The future Route 643 interchange will require review and approval as an additional access point, in accordance with the Virginia Highway Corporation Act.

Several of the interchanges included in initial construction are proposed for construction to less than their full section. Three lane overpasses are planned at some locations. Should sufficient traffic volumes develop which require more capacity than provided by diamond interchanges, the opportunity exists for higher capacity single-point diamond interchanges to be constructed. All of these improvements are the responsibility of the Toll Road Investors Partnership II and must begin at the time that unacceptable levels of service in traffic flow develop. The commitment to improve is conditioned by the economic feasibility of making the improvement. A determination that an improvement cannot meet this condition could significantly harm the performance of the Dulles Greenway and the feeder road system.

Toll Road Plan



Feeder Road Network

- **Four-lane Facility**
 ————— **Four-lane Facility, expandable to six lane**
 ————— **Six-lane Facility**

POLICIES

1. The general locations for Toll Road planning area roads appear on the Planned Road Network Map on p. XX.
2. The County will encourage the continued improvement of the area road network to support development.
3. The County should maintain flexibility in the planned road network for areas where little or no development has occurred. The planned road alignments should be conceptual and the precise location of new roads determined in cooperation with VDOT, Loudoun County, and the development community by standard engineering practice.
4. The County will address immediate secondary road improvements for Route 643, Route 659, and the Route 625/643/772 intersection in conjunction with the completion of the Dulles Greenway by encouraging the use of VDOT secondary road program funds, Loudoun County road funds, and development proffered road funds for those improvements.
5. The County will continue to apply the road funding policies adopted in the General Plan and the Proffer Guidelines.
6. The County will pursue new, innovative funding sources such as the Inter-modal Surface Transportation Efficiency Act (ISTEA) legislation, in coordination with VDOT.
7. The County supports private road construction when VDOT standards are met. Private streets must be built to FSM standards when VDOT standards are not met. Private road approvals should include a clearly defined maintenance agreement in keeping with current County policies and a design which supports the community design goals of the TRP. The County will not maintain private streets.
8. The County supports additional local access from Route 606 to Dulles Airport for passenger and cargo traffic. The local access road should be a four lane road to accommodate the potential traffic and may be funded through a variety of sources including proffers from adjacent private development as well as federal and state funds.
9. The County encourages that a future interchange at Route 643 and the Dulles Greenway be planned for construction.
10. Major access roads will be located on or near the periphery of the node to avoid conflict with transit services and pedestrian traffic. Automobile access roads in nodes should be provided by parallel or intersecting arterials rather than by transit corridor.
11. An east-west connector road between Route 860 and Route 621 should be provided in the planning area south of the Toll Road when development warrants it.

PEDESTRIAN TRAVELWAYS

Higher densities, coupled with transit access, will require distinct and clear pedestrian amenities to facilitate pedestrian circulation among uses, buildings and transit stops. Concentrated development lends itself to pedestrian orientation due to the ease of traversing destinations with short distances. Prototypical suburban development has deemphasized functional pedestrian amenities due to the usually long distances involved. Pedestrian circulation facilities within these communities have functioned more as recreational amenities. Pedestrian travelways incorporated into site design for high density development and transit-related nodes reduce auto-related congestion for short trips and maximize access to uses and transit facilities within the area. Pedestrians require safe and convenient access among transit facilities and building entrances. The County promotes basic design guidelines for successful pedestrian circulation in nodes, including minimizing walking distances, connecting abutting land uses with travelways and providing safe travel through the separation of pedestrian facilities from automobile facilities. Successful pedestrian facilities are designed as attractive, clearly delineated travelways that adequately accommodate pedestrian travel.

POLICIES

1. New development will provide for internal and interparcel pedestrian and bikeway connections.
2. Development in the Toll Road planning area will incorporate a pedestrian travelway network that facilitates pedestrian circulation within a development, by providing safe, direct, clearly-defined links among transit facilities and the mix of uses located within a node, as well as connections among parcels.
3. Intersections and street crossings shall provide for pedestrian safety and convenience, including clearly marked travelways, signage, and pedestrian signals.
4. Site Plans for projects to be developed in nodes and in secondary areas should include clearly delineated pedestrian connections among uses.
5. Walking distances to transit stops should be limited to approximately 1/4 mile to provide good pedestrian access to transit services.
6. Buildings will be clustered to minimize walking distances among uses. It should be easy, quick, and safe to walk from building to building.